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ON  
RECTO-VESICAL LITHOTOMY;

WITH THE

REPORT OF A CASE IN WHICH THIS METHOD WAS SUCCESS-  
FULLY EMPLOYED.

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28123

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A close investigation of the various structures annexed to the urinary bladder, and the different practicable channels by which the latter may be entered for the purpose of removing urinary calculi or foreign bodies in general, cannot fail to impress us with the advantages of recto vesical section. Aside from the facility with which the bladder can be reached through the rectum, and the simplicity of the operation itself, we almost entirely avoid any important structure appertaining to the discharge or retention of urine, the ejaculation of semen, and other subordinate organs belonging to any of these functions. We encounter, moreover, no blood-vessels of any account, and have, therefore, no apprehension of haemorrhage.

These considerations suggest at once both the feasibility and superiority of this recto-vesical lithotomy, and it is surprising that this operation has not been resorted to and preferred to other methods now in vogue, though evidently of less operative value.

Although tradition has handed down the intelligence that the ancient Egyptians had already performed lithotomy per rectum, we are yet without accounts as to the manner of its execution or the results attained.

Certain it is, that if the operation was ever known or practiced by the ancients, it had become entirely obsolete\* and been forgotten when C. L. Hoffmann, in the year 1779, again suggested it. But, in the

— enthusiasm arising from the comparatively good results attained by lateral section, his proposition was utterly disregarded.

Sançon, led by similar reflection, caught the idea likewise, and had the boldness not only to suggest, but also to execute, lithotomy per rectum; his thesis on this subject was published at Paris in the year 1815.

Sançon's operation, although a decided step in the right direction, is, strictly speaking, not recto-vesical section itself, for he appropriates *only* the external sphincter muscle, exposing thereby the prostate gland, and, working his way between the latter and the anterior wall of the rectum towards the basis prostatae, he incises the corpus trigonum.

The only surgeon who ever conceived a correct idea of recto-vesical lithotomy was Sleigh. He suggested the dilatation of the external sphincter by Weiss's three-bladed speculum, and the incision of the bladder through the rectum immediately behind the prostate gland; and this process it is which we must consider as genuine recto-vesical section.

Both operations, however, have made but little headway in professional favor; and the few surgeons that adopted Sançon's method were the more justified to lay it aside, since the author himself relinquished it in favor of Vacca Berlinghieri's modification. With reference to Sleigh's operation, we are unable to say how often and with what success, or indeed whether it was performed at all. Thus, we may fairly assume that recto-vesical section, as a legitimate and generally recognized method, had no practical existence; for all our careful research has not revealed a single instance in which Sleigh's operation had been executed, and at any rate, not within the last thirty years. So much so had his process been disregarded, undervalued, that most authors and the most complete works of surgery do not even mention his name in connection with lithotomy.

All that has been said in favor of or against recto-vesical section exclusively refers, therefore, to the method of Sançon; but it is evident that the *pro* and *con* appertain in a still higher degree to Sleigh's process.

Most surgical authors ascribe to lithotomy per rectum the decided advantage of easy execution, directness of application, the smallest practicable wound, and the least possible haemorrhage; the correctness of which advantages may be readily proven by experimental operation on subjects. Many difficulties in connection with the operation

are, however, alleged, tending to annihilate so completely all the advantages enumerated, as to exclude the inducement of ever again resorting to the operation.

The truth, however, is that all sorts of difficulties, how insurmountable they may have appeared or actually been in a former epoch of surgery, have, for our time, lost all practical significance, as we ~~presently~~<sup>ever have</sup> shall proceed to show.

First of all, it was said, that the space between the basis of the prostate gland and the *cul de sac* of the peritoneum be too small, and that its injury was inevitable on making a sufficiently large incision into the corpus trigonum of the bladder. This objection cannot be maintained, having found this space of the length of  $1\frac{3}{8}$  inch—consequently larger than what under ordinary circumstances is required. For the extraction of a stone of medium size, a wound of three-fourths of an inch suffices; and if a larger aperture should be desirable, its extension into the prostate gland is practicable. The superior angle of the wound is thus more than half an inch remote from the peritoneal duplicature. But even under the worst supposition, that the peritoneum should be injured, it follows not, that any particular danger would thereby prejudice the ultimate result of the operation, since we have become acquainted with the means by which simple peritoneal wounds may be rendered almost harmless. We may but put the reader in mind of the many successful operations of ovariotomy, and especially of a case operated on by our distinguished friend, Isaac Baker Brown, Esq., at St. Mary's Hospital, of London, some years ago, in which the abdominal cavity had been exposed to the atmosphere for fully 45 minutes without producing inflammation of the peritoneum.

It has been furthermore insisted on, that injuries to the *vasa deferentia*, the seminal vesicles, and the ureters could scarcely be avoided. This objection, also, does not hold. We have made this operation on subjects, and, without exercising any particular care, did not touch either the peritoneum or any of the other parts named. The ureters can hardly be taken into account, as they are farthest removed from the line of incision. And the *vasa deferentia*, being of more immediate importance, leave, in the empty state of the bladder, an intervening space of half an inch at the closest approximation. But if the bladder is properly distended with water, that space is considerably enlarged thereby, and an incidental injury to either *vas deferens* totally out of question. The staff should, however, be dispensed with,

not only as unnecessary, but likely to be mischievous in misdirecting the line of incision; for the operator has ample space and access to choose the point of puncture, and to give the knife the intended direction without the aid or incumbrance of the staff.

Another objection raised, is the entering of fæces into the bladder, and the continual irritation of the wound by their passage. This difficulty is, to modern surgery, of no particular consequence, as it is in the power of the surgeon to protect both bladder and wound from contact with the excrements.

It is, of course, necessary that the intestinal canal be evacuated prior to the operation, by both cathartic and injection, and then so completely to constipate it by large doses of opium, and eventually by acetate of lead, that no fæces can descend deep enough to come in contact with the wound.

Infiltration of urine into the cellular tissue of the pelvis, and its subsequent inflammation, or the formation of pus or gangrene in the organs of the pelvis, also incurable recto-vesical fistulæ, are additionally enumerated as the most frequent attendants of this mode of operation. But since Dr. J. Marion Sims has introduced his incomparable suture into surgery, ~~with~~ which he daily ~~attains~~, the happiest results in ~~attains~~ ~~achieve~~ vesico-vaginal fistula, the last-named objection has lost all its force. ~~can~~ No one ~~will~~ indeed doubt the successful union of a recent wound in comparatively healthy structure, when finding that the silver suture closely unites the irritated and callous edges of old vesico-vaginal fistulæ.

The unceasing labors of this highly meritorious surgeon have indeed initiated a new era in surgery, and his improvements are doubtless calculated to impart a new and lasting impulse to lithotomy.

We have thus argumentatively disposed of the principal difficulties as regards recto-vesical section, and have thereby paved the way for its practical introduction.

The opportunity to see our favorable opinion of the therapeutic value of this operation fully realized by practical results, has been meanwhile afforded us.

Mr. James Titus, a merchant, twenty-six years of age, of good and robust constitution, and enjoying at the time general good health, consulted us in reference to some trouble about the urinary bladder. The examination revealed a moderately large and hard stone. We proposed an operation, and the patient acceded.

Though having almost certainly resolved on the recto-vesical ~~sec-~~

tion, we did not fail to avail ourselves of the counsels of some of our professional friends. They all agreed with us, that the operation would in every respect be fully justified and practicable, and they shared our expectations of a complete and speedy result.

~~Dr. J. Marion Sims, to whose high-minded and benevolent conduct towards us on many former occasions we felt already deeply indebted, immediately proffered us the assistance of his valuable experience; and Drs. Louis Sayre, Palmedo, Whaley, Emmet, and others, kindly tendered their aid.~~

To guard against any unforeseen contingencies, the patient was first carefully examined by Drs. Sims, Emmet, Whaley, and ourself; and it was thereby established that, by means of Sims' speculum, sufficient room could be secured for operative proceedings. The inferior haemorrhoid artery was found to lie in a deeply descending position, approaching almost the median line and the basis of the prostate gland, where its pulsation could be distinctly felt.

The parts surrounding the external sphincter appeared healthy, whereas its mucous membrane was coarsely wrinkled, and studded with varicose knots. The water injected into the bladder, as well as Sims' speculum, caused such irritation, that the patient protruded the base of the bladder with the anterior wall of the rectum—a circumstance which had frequently attended his alvine evacuations. The prostate gland appeared of normal size, and was from all sides accessible to the touch. There was, therefore, nothing of an untoward nature about the local condition of the case.

The 18th of July, of the present year, was fixed upon for the operation. About twenty members of the profession, who had manifested a lively interest in the undertaking, were assembled, and by their presence bore witness to the importance they attached to the operation. Besides the gentlemen already named, there were present Drs. Carl Th. Meier, Green, Krakowitzer, Ostrander, Voss, Maebert, Valentini, Lee Jones, and others. The patient, prepared by cathartics and enema, was laid upon his left side, with his legs crossed and drawn up, but not fastened. By means of an elastic catheter the bladder was injected with water, and the former left in position. Chloroform was not administered, partly because the operation was not a very painful one, as well as for the purpose of securing a perfectly quiet and unaltered position. Thereupon we introduced Sims' speculum, firmly drawing the sphincter backward and upward, by which means the operative field, with all its contours, was freely exposed. We next fixed the left

forefinger into the middle of the posterior margin of the prostate gland, and inserted the point of a small two-edged scalpel of Luer on its median line, through the rectum into the bladder, slightly directing the knife anteriorly and superiorly to a supposed point, about one and a half inch above the symphysis, in the linea alba. The wound was just large enough to admit the left forefinger; the haemorrhage consequent on the incision was very slight, and scarcely exceeded half an ounce. We had presumed that the pressure of the water in the bladder would have been of sufficient force to press the stone towards the wound, if not to eject it. But this was not the case, principally owing to the fact that the patient was not able to bear a more copious injection. The wound being too small to extract the stone with the finger, we introduced a straight stone forceps, in doing which we unfortunately got hold of the catheter as well, (which, as already stated, we had by way of precaution retained there, so as not to injure the sutures upon its reintroduction;) and the assistant's attention being absorbed in the operation, failed to notice that the catheter had moved. Having thus vainly tried for several seconds to extract the stone, we conjectured that the difficulty rested upon the relative disproportion of its size and that of the wound, and hence we increased the length of the latter by about two lines, in the direction of the prostate gland, without, however, relinquishing our hold on the stone. On renewing the tractions we succeeded in bringing the stone into the wound, and discovered that the catheter likewise had lodged there. This difficulty being removed, the stone was withdrawn with great ease, and the act was thus consummated within the space of fifteen seconds.

It may be readily comprehended that the difficulty arising from the retention of the catheter could have been averted, as the subsequent introduction of another catheter met with no obstacle. We are equally convinced that the wound would have sufficed, without lengthening it, to allow the withdrawal of the stone, the length of the latter being  $2\frac{1}{2}$  inches by  $1\frac{1}{2}$  wide, and 1 inch thick, and weighed  $1\frac{1}{2}$  ounce.

Beyond the delay of several seconds in the performance of the operation, no other disadvantage was thereby occasioned.

That the haemorrhage was slight, is satisfactory evidence that we were fortunate enough to avoid injuring the haemorrhoid artery.

The second act of the proceedings consisted in uniting the recto-vesical wound, an operation which we could not have intrusted to more skillful hands than those of our excellent friend, Dr. J. Marion Sims. The doctor inserted, with great elegance, five silver sutures, and

his complete success may be judged by the fact that on injecting the bladder not a drop of fluid escaped into the rectum. This completed the operation. Two grains of opium were at once given to the patient, who was thereupon put to bed. An elastic catheter was then introduced, and secured. The patient assured us of his entire comfort; that he had experienced almost no pain from the operation, and that the only inconvenience he suffered had arisen from the peculiar position in which he had been placed. Ice-water and iced milk were ordered for his diet.

July 18th, 6 P. M.—Patient is comfortable, free from pain; his urine, which passes freely from the bladder through the catheter, is dark red, as if containing blood, and of sour reaction. The effects of the opium are very moderate. Prescribed another dose of opium and oil emulsion, with liq. potass carbonatis.

July 19th, 2 A. M.—We were called to the patient. The urine had ceased to pass, and severe pains in the bladder had set in, while he also complained of headache. The catheter, which was found to be choked, was removed, and another introduced, when the urine streamed out with great force. No urine in the rectum. Patient greatly relieved; atmospheric temperature about 82 degrees Fahrenheit; the patient was in a feverish condition, and cold applications were thereupon made to the head and hands.

Having introduced a tube into the rectum, to allow the escape of flatulent gases, we left him at 4 A. M. in a comparatively comfortable condition.

10 A. M.—Patient had slept several hours. Pulse, temperature, and thirst moderate. The urine being of a brown-red color, and seemingly containing much blood, passes freely through the catheter; abdomen distended by gases, but not tender; bladder and rectum free from pain; slight discharge of bloody mucus from the rectum.

The urine, microscopically examined, shows neither blood nor pus, but an abundance of uric acid, some urate of soda, traces of phosphates, mucin, mucous corpuscles, epithelium, and vibrios.

6 P. M.—Pulse good; patient has slept twice, about three hours each time; has discharged  $1\frac{1}{2}$  pint of urine, which reacts but little acid; suffers no particular inconvenience from the catheter; no pain in bladder or rectum, nor even the slightest irritation; moderate disposition to evacuate bowels. Prescribed two grains of opium.

10 P. M.—Patient sent for me in haste; he felt uncomfortable in consequence of the retention of urine, caused by the obstruction of the

catheter; introduced another, and drew 9 ounces of urine, which entirely relieved him; cleansed the bladder by warm water injections.

July 20th, 7 A. M.—Patient has slept from four to five hours. During the night he passed 1 pint of urine; two hours ago the catheter slipped from the bladder; he consequently feels the pressure of urine, but without suffering pain. Introduced a new catheter, and drew off 8 ounces. The pressure of the walls of the bladder is so great that it forces the urine a distance of several feet; its color continues unchanged, while the acidity is less. No pain anywhere; inclination to stool was checked by an opium pill. Microscopical examination of the urine showed increased mucous corpuscles, and on boiling, it was found to be slightly turbid, which, however, arose but partly from albumen, as the addition of nitric acid tended in a measure to clear it; hence there was presence of phosphates.

6 P. M.—Patient comfortable in every respect; is in good spirits; no pain in bladder or rectum. Flatulent gases escape freely through the tube introduced into the rectum, but no trace of urine there. A pint and a quarter of urine has been discharged through the catheter during the past eleven hours; slight tenderness in the s. romanum. Prescribed one opium pill. Owing to increased appetite, a soft-boiled egg is added to the diet.

July 21st, 10 A. M.—Patient has slept excellently; appetite is good, and his general condition satisfactory; pulse 88; no pain; free discharge of urine through the catheter. During the night the catheter had slipped out, and patient may have slept several hours without it. On awaking he himself introduced it, when the urine passed with great force. No inconvenience of any kind had thus been caused. Catheter removed, and a new one replaced.

6 P. M.—In his general condition there is no change. Irritation in the urethra, with moderate mucous discharge; inclination to stool. One opium pill.

July 22d, 9 A. M.—General condition satisfactory, in spite of increased gonorrhœa. Removed the catheter, with direction that patient might himself introduce it as soon as the pressure of the urine should make it necessary, or if unsuccessful therein to send for us.

6 P. M.—Patient perfectly comfortable; pulse 88; urine passed six different times during the day without artificial means—in all about 24 ounces, which was of neutral reaction. Medicine discontinued; one opium pill.

July 23d, 9 A. M.—Patient has slept well; passed his urine freely; is

free from all pain; is in a cheerful state of mind, and longs for better nourishment. Diet, beef-tea, one potato, and a small cutlet.

6 P. M.—As before.

July 24th, 10 A. M.—Patient has passed a comfortable night, and has slept well; pulse, temperature of skin, and general condition entirely satisfactory; tongue little coated, but moist, although relishing food; the abdomen rather expanded, and distended by gases—otherwise perfectly free from pain; bladder and rectum in the best possible condition, the latter entirely free from all irritation. Since our last visit about one quart of urine has been discharged, and without pain; the gonorrhœa abating. The urine presents a thick, viscid, straw-colored sediment, which, while it does not mix with the fluid, is evidently composed of mucus from the bladder and the urethra; the urine putrefies in a short time, and largely generates ammonia. The next day was fixed upon for the removal of the sutures. A more nourishing diet is allowed, and tinct. ferri pomati. prescribed. Patient is permitted to sit up.

July 25, 2.30 P. M.—The interest to witness the final result had, with few exceptions, reassembled the gentlemen who were present at the operation. The patient was out of bed, and assured us that he was able to walk or sit without the least inconvenience. He looked paler and thinner, but was otherwise well in every respect, and stated to the gentlemen present that the after-treatment, like the operation, had been equally unattended by pain, and that he could pass his urine without the aid of artificial means, and without the slightest difficulty. He then resumed the same position on the operating-table as at the time of the operation. The speculum was then introduced, and the anterior wall of the rectum, as well as the wound, were exposed for the first time since the operation. The rectum was filled with soft, yellowish (from the milk diet) faeces, which were removed by a sponge, and, after thorough cleansing, the wound proved to be perfectly closed by first intention. The surrounding parts were neither unusually reddened nor in the least inflamed, swollen, painful, or covered with morbid secretion. Even the suture wounds showed not the slightest tendency to ulceration. The wires were withdrawn by Dr. Sims, with the greatest facility.

On the following day I presented the patient personally to Professor Valentine Mott, in New York, who expressed his entire approbation of the method of the operation and its result. This introduction was incidental to a ride of about two hours in a comfortable carriage.

The patient experienced no inconvenience whatever, and he enjoyed the exercise, without feeling any inclination to urinate.

Thus, on the eighth day after the operation, the patient had completely recovered, and was dismissed from our treatment.

It is scarcely necessary to add any closing remarks to this communication, inasmuch as we have in the introduction sufficiently indicated our views in regard to this method of operation. The result obtained requires no further comment. Nevertheless, it appears desirable to refer to some points which presented themselves, both during the operation and in course of the after-treatment.

1. The operation, as we have elsewhere stated, was, for sufficient reasons, performed without administering chloroform, and we have the less cause to regret this, as it was painless throughout—a circumstance the more surprising from the fact that the patient is naturally of an easily excited, nervous temperament, his pulse at the time of the operation being 150; and that, on the other hand, the lower portion of the rectum is on the slightest irritation exceedingly painful and troublesome. The simple wound seems to be exempt, however, from pain, as the concrete case demonstrates.

2. The retention of the catheter during the operation is entirely unnecessary, and in this instance proved itself an obstacle to the speedy execution of the operation. If it be apprehended that the patient ~~could~~ not retain the injected water, we should prevent its discharge by the application of an india-rubber ring to the penis, in preference to the catheter.

3. The infusion of air as well as water into the bladder during the after-treatment we do not commend, because of the proneness to alkaline fermentation of the organic components of the urine, (mucin, mucous corpuscles, and epithelial cells,) which would be additionally stimulated by the entrance of atmospheric air. In our case, putrid gases were thus generated in the bladder, which, on escaping through the urethra, caused a burning sensation. The chemical action of the gases on the wound was also to be apprehended; and although this was not evidenced in this instance, caution demands that, in future cases, surgeons should seek to prevent the accumulation of putrid gases, as much as may be in their power. It should be understood, however, that in clearing the catheter we infused but little air, so as not to expose the patient to the danger of bursting the wound by its pressure.

4. Liquor kali carbonici proved not only to be of ~~good~~ effect in *excellent*

neutralizing the uric acid of the urine, but also in checking the foul fermentation of the faeces.

5. For the purpose of constantly keeping the wound free from contact with the urine, we allowed the catheter to remain, no doubt, longer than necessary, which caused a traumatic gonorrhœa. We are of opinion that our caution carried us too far, and that two days would have sufficed to fully close the wound; while, on the other hand, there was danger that the gonorrhœa might have communicated serious inflammation to the bladder.

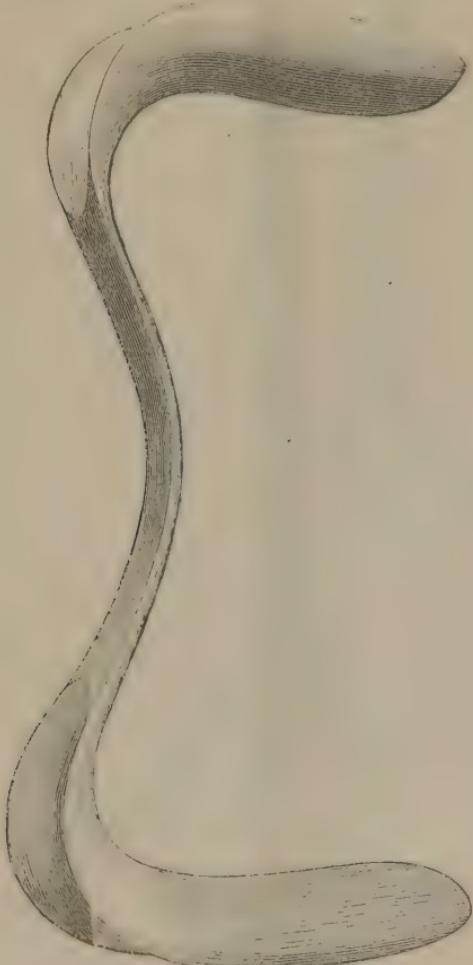


Fig. 1.

In our procedure during the operation, as well as in the after-treatment, there is nothing that is new or unknown, and it is scarcely

necessary that we should further enlarge on it. For the better understanding of those, however, who are unacquainted with Sims' suture and the instruments used by that gentleman, we add several engravings.

Fig. 1 represents the speculum, originally intended for the vagina, but equally suited for recto-vesical section.

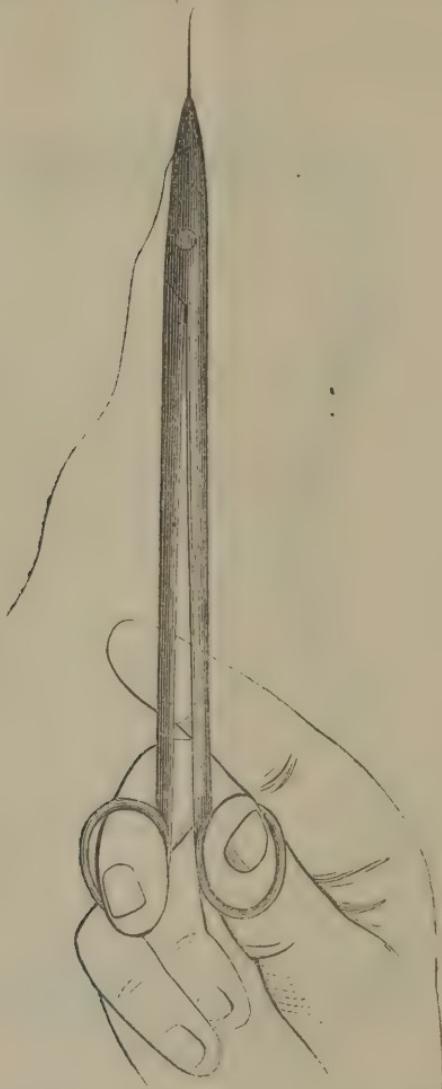


Fig. 2.

Fig. 2, Sims' needle-holder, with a needle one inch in length, at-

tached to which is a loop of silk thread. The margin of the wound is held by a sharp hook, and drawn up when the needle is passed through it. The same process is followed with the opposite margin. The needle should be held in a right angle with the forceps, and then the silver wire, hooked in the silk loop, is drawn through.

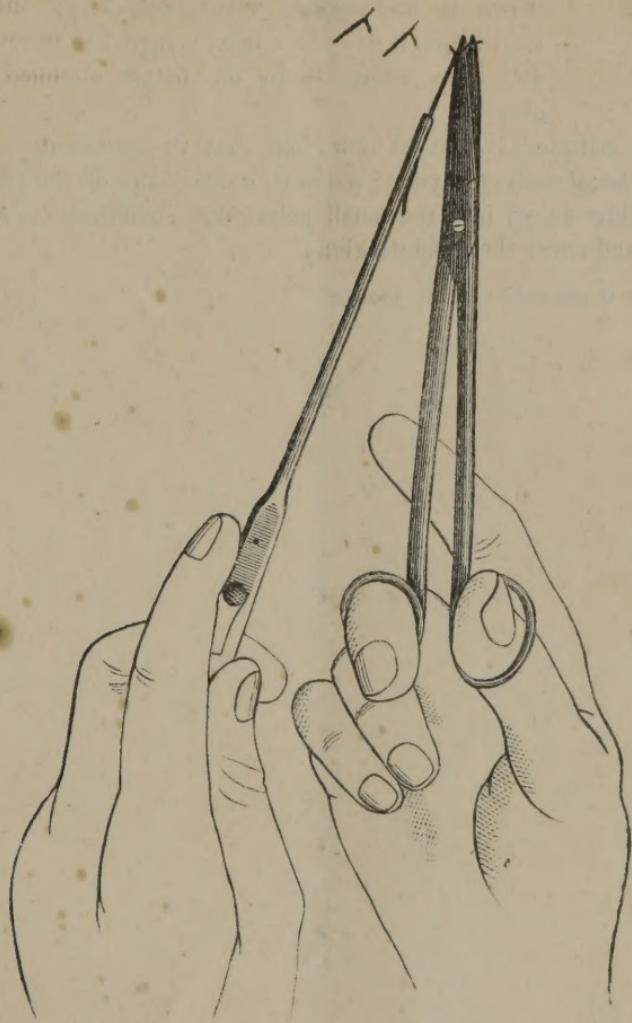


Fig. 3.

Fig. 3, the process in which the wire, held by a long pair of forceps, is, by means of a small director, bent over the wound; and next, the closure of the latter by torsion with the forceps.



Fig. 4, silver suture after removal.

The author is well aware that vesical suture has been repeatedly employed, but only in high lithotomy; and even recently, Dr. Lotzbeck, of Tübingen, communicated a case from the clinic of Professor Von Bruns, in which it was applied with good effect; but, to our knowledge, it has never been resorted to in low section, and Sims' suture is by far better qualified than all others.

Fig. 4.

In conclusion, it may be remarked, that we should not commend recto-vesical section in young patients, on account of the peritoneum descending deeply into the small pelvis, and sometimes as low as to reach and cover the prostate gland.

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08